

# IRON AND STEEL SCRAP

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**Domestic survey data and tables were prepared by Sirirat Harris, statistical assistant.**

Iron and steel scrap is a vital raw material for the production of new steel and cast-iron products. The steelmaking and foundry industries in the United States are highly dependent upon the ready availability of scrap from manufacturing operations and from the recovery of products that are no longer used or needed. The steel industry has been recycling steel scrap for more than 150 years. In 2003, domestic electric arc furnace (EAF) steel made primarily from recycled ferrous scrap in about 105 minimills was about 50% of the total raw steel produced. Consistent with international usage and Federal Government policy, the U.S. Geological Survey (USGS) reports all data on iron and steel in metric units, unless otherwise noted.

Steel scrap recycling conserves energy, landfill space, and raw materials. In 2003, the domestic steel industry recycled about 69 million metric tons (Mt) of appliances, automobiles, cans, construction materials, and other steel products. This resulted in an overall recycling rate of nearly 71% (American Iron and Steel Institute, 2004<sup>1</sup>). The remelting of scrap requires much less energy than the production of iron and steel products from iron ore. Each year, steel recycling saves the energy equivalent of the electrical power needed for 1 year by approximately one-fifth of the houses in the United States (about 18 million). Consumption of iron and steel scrap by remelting reduces the burden on landfill disposal facilities and prevents the accumulation of abandoned steel products in the environment. Every metric ton of steel recycled saves about 1.134 kilograms (kg) of iron ore, 635 kg of coal, and 54 kg of limestone that would otherwise be consumed to make the iron used in that steel.

In the United States, the primary source of obsolete steel is the automobile (Rich Tavoletti, marketing manager, American Iron and Steel Institute, unpub. data, July 2002). Of the ferrous metals used to make a typical 2003 U.S. family vehicle, 45% was recycled metal. The steel industry recovered and recycled about 14.2 Mt of iron and steel automobile scrap for recycling in 2003 (American Iron and Steel Institute, 2004<sup>§</sup>). The recycling rate of automobile scrap steel was nearly 103% in 2003 compared with 101% in 2002. A recycling rate greater than 100% is a result of the steel industry recycling more steel from automobiles than was used in the production of new vehicles.

The recycling rate of obsolete appliance scrap had increased to 81% in 1997 from 20% in 1988, decreased to 72% in 1998, and rebounded to 90% in 2003 (American Iron and Steel Institute, 2004<sup>§</sup>). During 2003, more than 2.6 Mt of steel was recovered from recycled appliances. The typical appliance consists of about 75% steel, and 25% to 100% of the steel used in appliances is recycled. The recycling rate of steel cans increased to 61% in 1997 from 15% in 1988, decreased to 56% in 1998, and rebounded to more than 60% in 2003. The estimated rate of recycling of structural beams and plates in 2003 was up slightly to 96%, and that of reinforcement bar and other materials increased to 60% from 58% for 2002. In 2003, an estimated 25% of all new homes built in the United States was framed in recycled steel.

Minimills, in which EAFs are used, consumed greater quantities of direct-reduced iron (DRI) to improve steel quality, and integrated steelmakers continued to use small quantities of DRI in blast furnaces as a process coolant. Minimills often used a feed mix that has equal proportions of DRI, pig iron, and scrap. Raw steel production in the U.S. steel industry increased during 2003 by about 2%, and DRI production decreased by about 55% (Fenton, 2005, p. 38.2-38.5).

## Environment

Steel mills that receive ferrous scrap are occasionally exposed to radioactive materials without warning, and accidental meltings of radioactive scrap have cost the mills an average of \$12 million to \$15 million per event (Kohl, 2001<sup>§</sup>; Public Citizen, 2002<sup>§</sup>). At least 26 accidental meltings of radioactive material have been reported in the United States since 1983 (U.S. Environmental Protection Agency, 2003<sup>§</sup>). Especially disturbing was the discovery on December 16, 2003, by dock radioactivity sensors at the Jewometaal Stainless Processing BV facility in Rotterdam, Netherlands, of a canister containing uranium oxide, also known as yellowcake, in a shipment of steel. This material has no use other than in nuclear bomb making. International investigators determined that the origin of the steel shipment containing the canister was Iraq (American Metal Market, 2004).

The U.S. Congress mandated the U.S. Maritime Administration (MARAD) to dispose of 70 obsolete ships in the 94-ship James River Reserve Fleet near Fort Eustis, VA (Washington Times, 2003). The ships, some dating back to World War II, are floating environmental hazards. Officials fear that a serious hurricane could release polychlorinated biphenyls (PCBs) and asbestos into the river. The MARAD has been negotiating with foreign companies, including Able UK Ltd. in the United Kingdom, to scrap the ships in an environmentally safe manner before 2006.

Mercury is a serious environmental pollutant because of its toxic and bioaccumulative properties. Bacteria in aquatic systems can convert mercury to methylmercury, which can be concentrated as it moves up the aquatic food chain, thereby contaminating fish and endangering humans and wildlife that consume these fish. Mercury poisoning can cause central nervous system, kidney, and liver damage in humans and impair child development (Mallinckrodt Baker, Inc., 2004<sup>§</sup>). The automotive industry is a major contributor of mercury environmental contamination by using mercury in switches for active ride control systems, antilock braking systems,

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<sup>1</sup>References that include a section mark (§) are found in the Internet References Cited section.

background lighting in displays, convenience lighting, and high-intensity discharge headlamps. An estimated 200 metric tons (t) of mercury was in more than 210 million vehicles in use in 2001 (Partnership for Mercury Free Vehicles, 2001§). Between 1974 and 2003, 217 million switches containing 224 t of mercury were installed in vehicles. An estimated record 8.2 t of mercury was released from mercury electric switches in scrapped and recycled vehicles during 2003. During the past 3 years, about 24 t of mercury has been released in the environment. An estimated 117 t of mercury has been released during the past 30 years. The Partnership for Mercury Free Vehicles consists of recycling associations and environmental groups advocating safe and economical recycling of mercury and the phasing out of all automotive uses of mercury as soon as possible.

## Consumption

Domestic data for ferrous scrap were derived from voluntary monthly or annual surveys sent by the USGS to U.S. scrap-consuming operations. About 49% of the known manufacturers of pig iron and raw steel responded to the surveys. Their responses represented about 54% of estimated total scrap consumption by this class of consumers. The remaining 46% of scrap consumption was estimated on the basis of prior reports. Of the iron foundries, manufacturers of steel castings, and miscellaneous users, about 100% of the surveyed establishments responded to the annual survey, which represented about 55% of estimated scrap consumption for these consumers. Total consumption for these two classes of consumers was estimated by using statistical methods and prior reports. Actual survey data accounted for about 100% of total estimated scrap consumption by all classes of scrap consumers.

In 2003, brokers, dealers, and other outside sources supplied domestic consumers with 47.7 Mt of all types of ferrous scrap at an estimated delivered value of more than \$5.8 million and exported 10.8 Mt (excluding used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) valued at \$1.9 billion (tables 1, 8, 11). This represented a tonnage decrease of 8% for received quantities and a tonnage increase of 19% for exported quantities. The value of received scrap grades increased by 23%, and that of exported scrap grades increased by more than 58% during 2003.

Raw steel production was 93.7 Mt in 2003 compared with 91.6 Mt in 2002 (American Iron and Steel Institute, 2003, p. 75). The share of raw steel produced by electric and basic oxygen furnaces was 51% and by basic oxygen furnaces was 49%. In 2003, continuous-cast steel production represented 97% of total raw steel production; this was about the same as that of 2002. Raw steel production capability increased to 110 Mt compared with 103 Mt in 2002.

Steel mills accounted for 89% of all scrap received from brokers, dealers, and other outside sources; iron foundries and miscellaneous users received 7%; and steel foundries received 4% (table 1). Apparent total domestic consumption of ferrous scrap was 48 Mt of net receipts (total receipts minus shipments) and 14 Mt of home scrap (table 1). Stocks of ferrous scrap at consumer plants decreased by nearly 13% to 4.3 Mt (table 1). Total domestic consumption was more than 61 Mt, which was a 12% decrease compared with that of 2002. The total market for U.S.-produced scrap (net receipts plus exports minus imports) was 54.3 Mt compared with 57.4 Mt in 2002 (table 1). Feedstock used in electric furnaces by all iron and steel product manufacturers comprised scrap, 92%; pig iron, 5%; and DRI, 3% (table 4). Total consumption of DRI was 21% less than that of 2002 (table 1). Net shipments of all grades of steel mill products were 96.1 Mt, which was an increase of 6% from the 90.7 Mt shipped in 2002 (American Iron and Steel Institute, 2003, p. 27).

## Prices

The average composite delivered price of No. 1 heavy-melting steel scrap, calculated from prices per long ton published monthly by American Metal Market, was \$122.93 per metric ton. The price ranged from a low of \$106.13 per metric ton in June to a high of \$159.88 in December (table 8). The average composite delivered price of No. 1 heavy-melting steel scrap, calculated from prices per long ton published weekly in Iron Age Scrap Price Bulletin, was \$119.01 per metric ton; the price ranged from a low of \$102.92 per metric ton in June to a high of \$153.05 in December.

Based on weekly quotations by Iron Age Scrap Price Bulletin for 18-8 (18% chromium, 8% nickel) stainless steel scrap (bundles and solids) delivered to consumers in the Pittsburgh, PA, area, the average price increased by 33% to \$942 per metric ton from \$706 per metric ton in 2002.

The unit value of total ferrous scrap exports (excluding used rails for rerolling and other uses, and ships, boats, and other vessels for scrapping) increased by more than 24% to about \$180 per metric ton compared with that of 2002 (table 11). The unit value of total imports, which was about \$151 per metric ton, was about 24% more than that of 2002 (table 14).

## Foreign Trade

Foreign trade valuation continued to be reported on a free-alongside-ship basis for exports and on a customs-value basis for imports. In 2003, the U.S. trade surplus for all classes of ferrous scrap (including used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) was 7.2 Mt valued at \$1,403 million (U.S. Census Bureau, unpub. data, 2003). This represented an increase of 26% in quantity and an increase of 56% in value compared with the 2002 surplus of 5.7 Mt and \$897 million.

Total U.S. exports of carbon steel and cast-iron scrap (excluding alloy steel; ships, boats, and other vessels for scrapping; stainless steel; and used rails for rerolling and other uses) went to 64 countries and totaled 9.4 Mt (a 18% increase) valued at \$1.281 billion (a 52% increase) for an average of \$136 per ton (a 30% increase) (U.S. Census Bureau, unpub. data, 2003). The largest tonnages went to

China, 2.8 Mt; the Republic of Korea, 2.2 Mt; Mexico, 1.0 Mt; and Canada, 0.9 Mt. These four countries received 74% of the total quantity valued at \$952 million, which was 74% of the total value.

Total U.S. exports of stainless steel scrap went to 44 countries (2 more than in 2002) and consisted of 504,723 t (a 47% increase) valued at \$383 million (a 5% increase) for an average of \$758 per ton (a 3% increase) (U.S. Census Bureau, unpub. data, 2003). The largest tonnages went to Taiwan, 128,421 t; the Republic of Korea, 84,931 t; China, 82,876 t; and Finland, 76,884 t. These countries received 74% of the total quantity valued at \$273 million, which was 71% of the total value.

U.S. exports of alloy steel scrap (excluding stainless steel) were shipped to 44 countries (3 less than in 2002) and consisted of 504,723 t (a 26% increase) valued at \$281 million (a 37% increase) for an average of \$314 per ton (a 9% increase) (U.S. Census Bureau, unpub. data, 2003). The largest tonnages went to China, 314,745 t; Mexico, 295,119 t; and Canada, 138,146 t. These countries received 84% of the total quantity valued at \$238 million, which was 85% of the total value.

## World Review

Iron and steel scrap is an important raw material for the steel and foundry industries. Because scrap comes from such sources as discarded cars and consumer durables, industrial machinery, manufacturing operations, and old buildings, the relatively mature industrialized economies are generally the main exporters of scrap to lesser developed steelmaking countries.

The United States exported the most iron and steel scrap in 2002, followed by Germany, Japan, Russia, the United Kingdom, France, Ukraine, and the Netherlands (International Iron and Steel Institute, 2003, p. 102). The five most significant importing nations were, in decreasing order of importance, China, the Republic of Korea, Belgium and Luxembourg, Turkey, and Italy (International Iron and Steel Institute, 2003, p. 104).

## Outlook

The 8-month recession beginning in March 2001 finally ended in November 2001, and the economy began to improve slowly until summer 2003 (Bernanke, 2004§). The third quarter of 2003 displayed near-record levels of real economic growth, about 8% annualized. Growth appeared to continue with strength through the fourth quarter of 2003. U.S. economists polled by the Federal Reserve Bank of Chicago projected median U.S. gross domestic product (GDP) growth for 2003 and 2004 to be 4.0% and 5.5%, respectively (Federal Reserve Bank of Chicago, 2003).

Because of the close interdependence of the steelmaking and ferrous scrap industries, an examination and forecast of the steel industry in the context of the global economy will serve as the bellwether of the scrap industry. In late 2002, the International Iron and Steel Institute (IISI) revised its forecast downward for 2002 and 2003 because of rapidly changing world economic conditions (International Iron and Steel Institute, 2002§). The global economic picture was described as so uncertain by the IISI that it considered it almost impossible to make accurate predictions for the next 2 years. By late 2003, IISI thought that the confidence level regarding a global economic recovery had improved significantly (Christmas, 2003§). Although the growth projection of the GDP for 2003 was revised to be 2.2%, down from the early projection of 2.9%, the GDP growth for 2004 was projected upward to 3.1%.

Economic activity in China continued to be an important influence on these GDP projections. China's 2003 GDP growth was revised upward to 8.3% from the earlier estimated 7.8%, and the 2004 GDP was projected to be 8.0% (Christmas, 2003§). GDP projections for Asian countries in 2004 were India, 6.5%; the Republic of Korea, 5.3%; Taiwan, 3.8%; Australia, 3.2%; and Japan, 1.5%. The European Union's (EU-15) GDP growth rate was projected to be 2%. Of the top five economies in the EU, only the United Kingdom and Spain have projected GDP growth of more than 2% for 2004. Other GDP growth projections for 2004 were Ukraine, 5%; the Commonwealth of Independent States, 4.6%; Turkey, 4.5%; Russia, 4.4%; the North American Free Trade Agreement countries, 3.7%; and South America, 3.5%.

Steel consumption in China is expected to increase by 13.1% in 2004 and by 10.4% in 2005 (Hunt, 2004). China's finished steel-product consumption from 2001 to 2003 increased 22.2% annually, while steel consumption increases in the rest of the world were 2.2% annually. The IISI revised upward projections of world consumption of finished steel products to 6.4% from 4.9% for 2003, 6.2% for 2004, and 4.5% in 2005 (Hunt, 2004; Christmas, 2003§). China's share of global steel consumption for 2005 is an estimated 30.3% and an estimated 61% for the years 2004 and 2005.

During 2002, the domestic steel industry united to seek legal remedies against imported steel products. It received temporary relief under section 2001 of the 1974 Trade Act—3 years of tariffs of as much as 30% on certain steel imports. Relief from much of the import activity allowed the steel industry to restructure during the first 2 years of tariffs to become more competitive in world markets. At the end of the second year, in late 2003, the administration ended tariffs ahead of schedule.

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TABLE 1  
SALIENT U.S. IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON STATISTICS<sup>1</sup>

(Thousand metric tons and thousand dollars)

	1999	2000	2001	2002	2003
<b>Manufacturers of pig iron and raw steel and castings:<sup>2</sup></b>					
Ferrous scrap consumption	56,200 <sup>r</sup>	58,900 <sup>r</sup>	56,500 <sup>r</sup>	56,200 <sup>r</sup>	54,800
Pig iron consumption	47,800 <sup>r</sup>	49,200 <sup>r</sup>	46,900 <sup>r</sup>	42,500 <sup>r</sup>	39,700
Direct-reduced iron consumption	2,160 <sup>r</sup>	2,270 <sup>r</sup>	1,780 <sup>r</sup>	2,230 <sup>r</sup>	1,770
Net receipts of ferrous scrap <sup>3</sup>	42,600 <sup>r</sup>	45,100 <sup>r</sup>	42,700 <sup>r</sup>	43,400 <sup>r</sup>	42,400
Home scrap production <sup>4</sup>	13,500 <sup>r</sup>	13,800 <sup>r</sup>	13,400 <sup>r</sup>	12,700 <sup>r</sup>	12,600
Ending stocks of ferrous scrap, December 31	4,800	4,720 <sup>r</sup>	4,320 <sup>r</sup>	4,350 <sup>r</sup>	4,100
<b>Manufacturers of steel castings:<sup>5</sup></b>					
Ferrous scrap consumption	1,900	2,230 <sup>r</sup>	2,220 <sup>r</sup>	2,020 <sup>r</sup>	2,070
Pig iron consumption	11	11	32	34 <sup>r</sup>	1,270
Net receipts of ferrous scrap <sup>3</sup>	1,170 <sup>r</sup>	1,230 <sup>r</sup>	1,380 <sup>r</sup>	1,390 <sup>r</sup>	1,930
Home scrap production <sup>4</sup>	689 <sup>r</sup>	977 <sup>r</sup>	821	627 <sup>r</sup>	72
Ending stocks of ferrous scrap, December 31	226 <sup>r</sup>	147	157	147 <sup>r</sup>	55
<b>Iron foundries and miscellaneous users:<sup>5</sup></b>					
Ferrous scrap consumption	12,700 <sup>r</sup>	13,100 <sup>r</sup>	11,900 <sup>r</sup>	11,200 <sup>r</sup>	4,470
Pig iron consumption	1,180 <sup>r</sup>	1,360 <sup>r</sup>	1,120 <sup>r</sup>	1,170 <sup>r</sup>	658
Direct-reduced iron consumption	13	16	13	13	4
Net receipts of ferrous scrap <sup>3</sup>	7,720 <sup>r</sup>	7,810 <sup>r</sup>	7,640 <sup>r</sup>	7,240 <sup>r</sup>	3,400
Home scrap production <sup>4</sup>	4,960 <sup>r</sup>	4,820 <sup>r</sup>	4,250 <sup>r</sup>	3,750 <sup>r</sup>	1,080
Ending stocks of ferrous scrap, December 31	429 <sup>r</sup>	436 <sup>r</sup>	440	396 <sup>r</sup>	108
<b>Totals, all manufacturing types:</b>					
Ferrous scrap consumption	70,800 <sup>r</sup>	74,300 <sup>r</sup>	70,700 <sup>r</sup>	69,300 <sup>r</sup>	61,300
Pig iron consumption	49,000 <sup>r</sup>	50,600 <sup>r</sup>	48,000	43,700 <sup>r</sup>	41,600
Direct-reduced iron consumption	2,170	2,290 <sup>r</sup>	1,800	2,250	1,770
Net receipts of ferrous scrap <sup>3</sup>	51,500	54,100 <sup>r</sup>	51,800 <sup>r</sup>	52,000 <sup>r</sup>	47,700
Home scrap production <sup>4</sup>	19,100	19,600 <sup>r</sup>	18,500 <sup>r</sup>	17,100 <sup>r</sup>	13,800
<b>Ending stocks, December 31:</b>					
Ferrous scrap at consumer plants	5,450 <sup>r</sup>	5,300 <sup>r</sup>	4,920 <sup>r</sup>	4,890 <sup>r</sup>	4,270
Pig iron at consumer and supplier plants	724 <sup>r</sup>	930 <sup>r</sup>	787 <sup>r</sup>	753 <sup>r</sup>	467
Direct-reduced iron at consumer plants	307 <sup>r</sup>	291 <sup>r</sup>	318 <sup>r</sup>	269 <sup>r</sup>	352
<b>Exports:<sup>6</sup></b>					
<b>Ferrous scrap (includes tinplate and terneplate):<sup>7</sup></b>					
Quantity	5,000 <sup>r</sup>	5,230 <sup>r</sup>	6,750 <sup>r</sup>	8,200 <sup>r</sup>	9,770
Value	670,000 <sup>r</sup>	908,000 <sup>r</sup>	1,020,000 <sup>r</sup>	1,170,000 <sup>r</sup>	1,760,000
<b>Pig iron, all grades:</b>					
Quantity	65 <sup>r</sup>	57 <sup>r</sup>	20 <sup>r</sup>	25 <sup>r</sup>	75
Value	8,800 <sup>r</sup>	7,860 <sup>r</sup>	2,940 <sup>r</sup>	3,830 <sup>r</sup>	7,610
<b>Direct-reduced iron, steelmaking grade:</b>					
Quantity	8 <sup>r</sup>	7 <sup>r</sup>	4 <sup>r</sup>	4 <sup>r</sup>	7
Value	2,680 <sup>r</sup>	3,260 <sup>r</sup>	1,680 <sup>r</sup>	2,160 <sup>r</sup>	2,090
<b>Imports for consumption:<sup>6</sup></b>					
<b>Ferrous scrap (includes tinplate and terneplate):<sup>7</sup></b>					
Quantity	3,330 <sup>r</sup>	3,040 <sup>r</sup>	2,390 <sup>r</sup>	2,840 <sup>r</sup>	3,160
Value	348,000 <sup>r</sup>	349,000 <sup>r</sup>	249,000 <sup>r</sup>	341,000 <sup>r</sup>	463,000
<b>Pig iron, all grades:</b>					
Quantity	4,480 <sup>r</sup>	4,460 <sup>r</sup>	3,900 <sup>r</sup>	4,060 <sup>r</sup>	3,530
Value	472,000 <sup>r</sup>	540,000 <sup>r</sup>	428,000 <sup>r</sup>	463,000 <sup>r</sup>	518,000
<b>Direct-reduced iron, steelmaking grade:</b>					
Quantity	1,120 <sup>r</sup>	1,300 <sup>r</sup>	1,540 <sup>r</sup>	1,850 <sup>r</sup>	1,760
Value	105,000 <sup>r</sup>	143,000 <sup>r</sup>	138,000 <sup>r</sup>	182,000 <sup>r</sup>	221,000

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes manufacturers of raw steel that also produce steel castings.

<sup>3</sup>Net receipts of scrap is defined as receipts from brokers, dealers, and other outside sources plus receipts from other own-company plants minus shipments.

<sup>4</sup>Home scrap production includes recirculating scrap that results from current operations and obsolete home scrap.

<sup>5</sup>Some consumers in the "Manufacturers of steel castings" category also produce iron castings; some consumers in the "Iron foundries and miscellaneous users" category also produce steel castings.

<sup>6</sup>Data from U.S. Census Bureau. Export valuation is free alongside ship, and import valuation is Customs value.

<sup>7</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.

TABLE 2

U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF IRON AND STEEL SCRAP IN 2003, BY GRADE<sup>1</sup>

(Thousand metric tons)

Grade	Receipts of scrap		Production of home scrap		Consumption of purchased and home scrap	Shipments of scrap	Ending stocks, December 31
	From brokers, dealers, and other outside sources	From other own-company plants	Recirculating scrap from current operations	Obsolete scrap <sup>2</sup>			
Manufacturers of pig iron and raw steel and castings:							
Carbon steel:							
Low-phosphorus plate and punchings	351	--	220	--	502	30	132
Cut structural and plate	4,330	132	862	70	5,130	70	288
No. 1 heavy-melting steel	4,890	161	2,680	20	7,850	126	442
No. 2 heavy-melting steel	5,330	100	461	1	5,740	11	439
No. 1 and electric furnace bundles	4,600	15	1,690	30	6,140	123	285
No. 2 and all other bundles	859	15	2	--	900	--	38
Electric furnace, 1 foot and under (not bundles)	2	--	131	--	124	13	(3)
Railroad rails	278	22	43	--	337	--	15
Turnings and borings	2,080	70	51	--	2,240	2	122
Slag scrap	862	95	1,640	6	2,140	514	170
Shredded or fragmentized	9,050	884	335	112	10,200	91	576
No. 1 busheling	4,680	59	170	72	4,800	40	255
Steel cans, post consumer	253	(3)	71	--	340	--	84
All other carbon steel scrap	1,900	137	2,230	49	4,110	164	279
Stainless steel scrap	757	28	250	--	1,070	1	36
Alloy steel (except stainless)	121	5	469	18	585	8	27
Ingot mold and stool scrap	3	--	102	79	61	100	16
Machinery and cupola cast iron	35	--	3	--	33	1	(3)
Cast-iron borings	296	--	(3)	--	294	1	15
Motor blocks	9	--	--	--	8	--	1
Other iron scrap	408	51	388	--	893	142	302
Other mixed scrap	1,020	(3)	350	--	1,350	50	581
Total	42,100	1,780	12,200	456	54,800	1,480	4,100
Manufacturers of steel castings:							
Carbon steel:							
Low-phosphorus plate and punchings	1,860	2	6	(3)	1,880	1	13
Cut structural and plate	19	5	4	(3)	23	--	6
No. 1 heavy-melting steel	7	--	2	--	8	--	3
No. 2 heavy-melting steel	9	--	--	--	9	--	(3)
No. 1 and electric furnace bundles	1	--	--	--	1	--	(3)
No. 2 and all other bundles	--	--	--	--	--	--	--
Electric furnace, 1 foot and under (not bundles)	4	--	2	--	6	--	(3)
Railroad rails	(3)	--	--	--	--	--	--
Turnings and borings	15	--	5	--	21	--	(3)
Slag scrap	1	--	--	--	1	--	(3)
Shredded or fragmentized	11	--	--	--	11	--	(3)
No. 1 busheling	23	--	--	--	23	--	1
Steel cans, post consumer	--	--	--	(3)	--	(3)	--
All other carbon steel scrap	4	(3)	27	--	31	(3)	(3)
Stainless steel scrap	5	1	8	--	12	51	20
Alloy steel (except stainless)	15	1	17	--	33	(3)	1
Ingot mold and stool scrap	--	--	--	--	--	--	--
Machinery and cupola cast iron	--	--	--	--	--	--	--
Cast-iron borings	(3)	--	(3)	--	(3)	--	(3)
Motor blocks	--	--	--	--	--	--	--
Other iron scrap	1	--	(3)	--	11	--	9
Other mixed scrap	1	--	(3)	--	1	(3)	(3)
Total	1,970	9	72	(3)	2,070	52	55

See footnotes at end of table.

TABLE 2--Continued

U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF IRON AND STEEL SCRAP IN 2003, BY GRADE<sup>1</sup>

(Thousand metric tons)

Grade	Receipts of scrap		Production of home scrap		Consumption of purchased and home scrap	Shipments of scrap	Ending stocks, December 31
	From brokers, dealers, and other outside sources	From other own-company plants	Recirculating scrap from current operations	Obsolete scrap <sup>2</sup>			
Iron foundries and miscellaneous users:							
Carbon steel:							
Low-phosphorus plate and punchings	477	(3)	124	--	598	(3)	7
Cut structural and plate	510	28	1	15	554	(3)	17
No. 1 heavy-melting steel	133	(3)	12	(3)	145	(3)	1
No. 2 heavy-melting steel	97	--	--	--	97	--	
No. 1 and electric furnace bundles	(3)	--	--	--	(3)	--	--
No. 2 and all other bundles	24	--	24	--	48	--	2
Electric furnace, 1 foot and under (not bundles)							(3)
	58	--	(3)	--	58	--	
Railroad rails	35	(3)	29	--	63	3	1
Turnings and borings	18	--	1	--	21	(3)	1
Slag scrap	--	--	10	--	10	(3)	1
Shredded or fragmentized	685	--	--	--	685	1	24
No. 1 busheling	262	1	7	--	268	1	7
Steel cans, post consumer	2	--	--	--	2	--	(3)
All other carbon steel scrap	13	(3)	1	--	15	1	1
Stainless steel scrap	1	--	(3)	--	1	(3)	(3)
Alloy steel (except stainless)	(3)	--	(3)	--	(3)	--	(3)
Ingot mold and stool scrap	7	--	5	--	12	--	2
Machinery and cupola cast iron	268	(3)	66	(3)	338	(3)	7
Cast-iron borings	26	17	5	--	47	(3)	1
Motor blocks	142	214	338	--	688	2	7
Other iron scrap	373	4	418	--	779	8	27
Other mixed scrap	13	10	18	(3)	41	(3)	2
Total	3,150	275	1,060	15	4,470	17	108
Totals for all manufacturing types:							
Carbon steel:							
Low-phosphorus plate and punchings	2,690	2	350	(3)	2,980	31	153
Cut structural and plate	4,860	165	868	85	5,700	70	311
No. 1 heavy-melting steel	5,030	161	2,690	20	8,010	126	446
No. 2 heavy-melting steel	5,440	100	461	1	5,850	11	440
No. 1 and electric furnace bundles	4,600	15	1,690	30	6,140	123	285
No. 2 and all other bundles	883	15	25	--	948	(3)	40
Electric furnace, 1 foot and under (not bundles)	64	--	134	(3)	189	13	(3)
Railroad rails	314	23	73	--	400	3	16
Turnings and borings	2,110	70	58	--	2,280	2	124
Slag scrap	863	95	1,650	6	2,150	514	171
Shredded or fragmentized	9,750	884	335	112	10,900	92	601
No. 1 busheling	4,970	60	177	72	5,090	42	263
Steel cans, post consumer	256	(3)	71	(3)	342	(3)	84
All other carbon steel scrap	1,920	137	2,260	49	4,150	165	280
Stainless steel scrap	762	29	259	--	1,080	51	56
Alloy steel (except stainless)	136	7	486	18	618	8	29
Ingot mold and stool scrap	10	--	107	79	73	100	18
Machinery and cupola cast iron	303	(3)	69	(3)	371	1	7
Cast-iron borings	322	17	6	--	341	2	16
Motor blocks	151	214	338	--	696	2	7
Other iron scrap	782	55	806	--	1,630	149	338
Other mixed scrap	1,040	11	369	(3)	1,390	50	584
Total	47,200	2,060	13,300	471	61,300	1,550	4,270

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.<sup>2</sup>Obsolete home scrap includes ingot molds, stools, and scrap from old equipment, buildings, etc.<sup>3</sup>Less than 1/2 unit.

TABLE 3  
U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF PIG IRON  
AND DIRECT-REDUCED IRON IN 2003<sup>1</sup>

(Thousand metric tons)

	Receipts	Production	Consumption	Shipments	Stocks, December 31
Manufacturers of pig iron, raw steel, and castings:					
Pig iron	8,980 <sup>2</sup>	31,900	39,700	330	371
Direct-reduced iron (DRI)	1,820 <sup>3</sup>	W	1,770	15	352
Manufacturers of steel castings:					
Pig iron	1,270	(4)	1,270	(5)	68
DRI	(5)	--	(5)	--	(5)
Iron foundries and miscellaneous users:					
Pig iron	667	(4)	658	21	28
DRI	4	--	4	--	(5)
Totals for all manufacturing types:					
Pig iron	10,900	31,900	41,600	350	467
DRI	1,830	W	1,770	15	352

W Withheld to avoid disclosing company proprietary data. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes 1,500,000 metric tons purchased by electric furnace steel producers.

<sup>3</sup>Includes 1,000,000 metric tons purchased by integrated steel producers.

<sup>4</sup>Withheld to avoid disclosing company proprietary data; included in "Totals for all manufacturing types."

<sup>5</sup>Less than 1/2 unit.



TABLE 4

U.S. CONSUMPTION OF IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON IN 2003, BY TYPE OF FURNACE OR OTHER USE<sup>1</sup>

(Thousand metric tons)

	Manufacturers of pig iron and raw steel and castings			Manufacturers of steel castings			Iron foundries and miscellaneous users			Totals for all manufacturing types		
	Scrap	Pig iron	Direct-reduced iron (DRI)	Scrap	Pig iron	DRI	Scrap	Pig iron	DRI	Scrap	Pig iron	DRI
Blast furnace	1,040	--	393	--	--	--	--	--	--	1,040	--	393
Basic oxygen process	13,400	37,900	32	--	--	--	--	--	--	13,400	37,900	32
Electric furnace	40,300	1,820	1,340	2,400	2	--	2,810	497	4	45,600	2,310	1,350
Cupola furnace	--	--	--	272	635	--	1,640	157	--	1,920	792	--
Other <sup>2</sup>	W	--	--	--	--	--	W	W	--	W	W	--
Direct castings <sup>3</sup>	--	36	--	--	--	--	--	--	--	--	36	--
Total	54,800	39,700	1,770	2,680	637	--	4,460	655	4	61,900	41,000	1,770

W Withheld to avoid disclosing company proprietary data; included with "Electric furnace." -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.<sup>2</sup>Includes air furnaces.<sup>3</sup>Includes ingot molds and stools.

TABLE 5  
IRON AND STEEL SCRAP SUPPLY AVAILABLE FOR CONSUMPTION IN 2003, BY REGION AND STATE<sup>1,2</sup>

(Thousand metric tons)

Region and State	Receipts of scrap		Production of home scrap		Shipments of scrap <sup>4</sup>	New supply available for consumption
	From brokers, dealers, and other outside sources	From other own company plants	Recirculating scrap resulting from current operations	Obsolete scrap <sup>3</sup>		
New England and Middle Atlantic:						
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	17	--	(5)	--	--	18
New Jersey and New York	1,940	--	90	1	--	2,030
Pennsylvania	3,350	143	1,990	61	18	5,520
Total	5,300	143	2,080	62	18	7,560
North Central:						
Illinois	2,170	94	568	2	13	2,820
Indiana	3,200	2	3,730	33	508	6,460
Iowa, Nebraska	1,980	3	75	--	(6)	2,060
Kansas and Missouri	132	2	30	--	(5)	163
Michigan	2,350	28	1,250	295	488	3,430
Minnesota	395	160	49	--	--	604
Ohio	7,090	225	1,590	32	250	8,690
Wisconsin	932	211	432	--	1	1,580
Total	18,200	727	7,730	361	1,260	25,800
South Atlantic:						
Delaware and Maryland	631	7	433	10	32	1,050
Florida and Georgia	799	5	32	--	(5)	836
North Carolina and South Carolina	3,020	(6)	262	--	(6)	3,290
Virginia and West Virginia	1,740	(6)	419	(6)	(6)	2,270
Total	6,190	159	1,150	25	78	7,440
South Central:						
Alabama and Mississippi	3,460	(6)	576	(6)	33	4,010
Arkansas, Louisiana, Oklahoma	4,330	(6)	443	(6)	(6)	4,930
Kentucky and Tennessee	2,360	81	146	--	(6)	2,570
Texas	3,210	783	413	2	109	4,300
Total	13,400	1,020	1,580	15	160	15,800
Mountain and Pacific:						
Arizona, Colorado, Idaho, Montana, Utah	2,130	6	510	(6)	(6)	2,650
California, Oregon, Washington	2,010	W	246	(5)	(6)	2,220
Total	4,130	W	756	9	38	4,870
Grand total	47,200	2,060	13,300	471	1,550	61,500

W Withheld to avoid disclosing company proprietary data. -- Zero.

<sup>1</sup>Supply available for consumption is a net figure computed by adding production to receipts and deducting scrap shipped during the year. The difference in stock levels at the beginning and end of the year is not taken into consideration.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Obsolete scrap includes ingot molds, stools, and scrap from old equipment, buildings, etc.

<sup>4</sup>Includes scrap shipped, transferred, or otherwise disposed of during the year.

<sup>5</sup>Less than 1/2 unit.

<sup>6</sup>Withheld to avoid disclosing company proprietary data; included in "Total" or "Grand total."

TABLE 6  
U.S. CONSUMPTION OF IRON AND STEEL SCRAP AND PIG IRON IN 2003, BY REGION AND STATE<sup>1, 2, 3</sup>

(Thousand metric tons)

Region and State	Manufacturers of pig iron and raw steel and castings		Manufacturers of steel castings		Iron foundries and miscellaneous users		Totals for all manufacturing types	
	Scrap	Pig iron	Scrap	Pig iron	Scrap	Pig iron	Scrap	Pig iron
New England and Middle Atlantic:								
Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont	1,690	23	--	--	431	155	2,130	178
Pennsylvania	5,580	2,790	89	1	129	27	5,800	2,820
Total	7,280	2,810	89	1	560	182	7,930	2,990
North Central:								
Illinois	2,580	2,020	4	1	289	1	2,870	2,020
Indiana	6,380	13,800	36	1	317	45	6,740	13,800
Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota, Wisconsin	2,830	48	17	(4)	1,290	289	4,150	337
Michigan	2,530	4,580	14	--	318	17	2,860	4,590
Ohio	6,450	6,620	1,850	1,270	457	53	8,760	7,950
Total	20,800	27,000	1,920	1,270	2,680	405	25,400	28,700
South Atlantic:								
Delaware, Maryland, Virginia, West Virginia	3,070	W	W	W	207	7	4,200	2,650
Florida, Georgia, North Carolina, South Carolina	3,960	W	W	W	4	(4)	3,960	114
Total	7,030	3,750	1	(4)	212	7	7,240	3,760
South Central:								
Alabama, Kentucky, Mississippi, Tennessee	5,900	W	(4)	W	768	W	6,670	4,160
Arkansas, Louisiana, Oklahoma	4,880	W	--	W	1	W	4,890	481
Texas	4,190	40	4	W	162	13	4,350	53
Total	15,000	4,630	4	(4)	932	60	15,900	4,690
Mountain and Pacific:								
Arizona, Colorado, Idaho, Montana, Utah	1,700	W	6	(4)	2	W	2,710	1,490
California, Oregon, Washington	2,050	W	48	(4)	88	W	2,180	3
Total	4,750	1,490	54	(4)	90	3	4,890	1,500
Grand total	54,800	39,700	2,070	1,270	4,470	658	61,300	41,600

W Withheld to avoid disclosing company proprietary data; included in "Total" or "Grand total."

<sup>1</sup>Includes recirculating scrap resulting from current operations and home-generated obsolete scrap.

<sup>2</sup>Includes molten pig iron used for ingot molds and direct castings.

<sup>3</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>4</sup>Less than 1/2 unit.

TABLE 7

U.S. CONSUMER STOCKS OF IRON AND STEEL SCRAP AND PIG IRON, DECEMBER 31, 2003, BY REGION AND STATE<sup>1</sup>

(Thousand metric tons)

Region and State	Carbon steel <sup>2</sup>	Stainless steel	Alloy steel <sup>3</sup>	Cast iron <sup>4</sup>	Other grades of scrap	Total scrap	Pig iron
New England and Middle Atlantic:							
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	(5)	--	--	(5)	W	(5)	(5)
New Jersey and New York	48	1	1	1	W	52	(5)
Pennsylvania	269	13	15	16	2	314	3
Total	317	14	16	17	2	366	4
North Central:							
Illinois	111	(5)	W	3	2	116	17
Indiana	396	5	W	14	20	435	150
Iowa, Kansas, Missouri, Nebraska, South Dakota	93	(5)	(5)	6	--	99	3
Michigan	119	(5)	(5)	7	3	130	4
Minnesota and Wisconsin	51	(5)	(5)	4	--	55	2
Ohio	313	35	10	32	--	390	92
Total	1,080	40	11	66	25	1,230	268
South Atlantic:							
Delaware, Maryland, Virginia, West Virginia	198	(5)	W	20	11	229	11
Florida, Georgia, North Carolina, South Carolina	227	(5)	W	2	7	236	14
Total	425	(5)	(5)	22	18	465	25
South Central:							
Alabama, Kentucky, Mississippi, Tennessee	546	W	W	267	W	1,310	69
Arkansas, Louisiana, Oklahoma	320	W	W	1	W	325	78
Texas	252	W	W	1	W	254	20
Total	1,120	(5)	1	272	496	1,890	167
Mountain and Pacific:							
Arizona, Colorado, Idaho, Montana, Utah	184	1	W	5	--	189	W
California, Oregon, Washington	85	(5)	W	6	43	133	W
Total	269	1	1	9	43	322	4
Grand total	3,210	56	29	386	584	4,270	467

W Withheld to avoid disclosing company proprietary data; included in "Total" or "Grand total." -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.<sup>2</sup>Excludes rerolling rails.<sup>3</sup>Excludes stainless steel.<sup>4</sup>Includes borings.<sup>5</sup>Less than 1/2 unit.

TABLE 8  
U.S. AVERAGE MONTHLY PRICE AND COMPOSITE PRICE FOR NO. 1 HEAVY-  
MELTING STEEL, WITH ANNUAL AVERAGES<sup>1</sup>

(Dollars per metric ton)

Period	Chicago, IL	Philadelphia, PA	Pittsburgh, PA	Composite price
2003:				
January	95.40	105.82	112.98	104.73
February	100.36	119.87	122.01	114.08
March	103.41	126.66	125.49	118.52
April	103.83	126.96	122.94	117.91
May	100.08	106.84	115.03	107.32
June	95.35	105.31	112.69	104.45
July	99.45	116.22	112.69	109.45
August	114.95	123.68	125.49	121.37
September	120.09	128.69	130.17	126.32
October	120.56	132.87	132.38	128.60
November	136.04	143.37	145.85	141.75
December	157.22	154.40	160.44	157.35
Annual average:				
2003	112.23	124.22	126.51	120.99
2002	88.36	90.10	99.22	92.56

<sup>1</sup>Calculated by the U.S. Geological Survey from prices published in American Metal Market.

TABLE 9  
U.S. EXPORTS OF IRON AND STEEL SCRAP, BY COUNTRY<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Country	2002		2003	
	Quantity	Value	Quantity	Value
Belgium	2	1,790	8	2,580
Bermuda	(3)	5	8	59
Brazil	2	304	15	2,340
Canada	1,290	149,000	1,120	154,000
China	2,650	447,000	3,150	682,000
Egypt	(3)	36	6	318
Finland	6	3,560	77	74,100
Germany	10	4,250	4	3,100
Guatemala	24	2,250	26	4,200
Hong Kong	46	15,100	37	11,900
India	109	20,500 <sup>r</sup>	69	20,800
Indonesia	8	2,440	8	2,510
Italy	27	4,910	64	16,100
Japan	30	21,200	59	31,300
Korea, Republic of	2,080	234,000	2,270	351,000
Malaysia	318	33,100	649	72,900
Mexico	1,350	143,000	1,330	172,000
Netherlands	2	1,040	18	11,800
Pakistan	1	284	8	1,590
Peru	(3)	16	63	7,850
Philippines	8	3,740	1	305
Portugal	(3)	4	33	3,680
Singapore	33	3,770	37	4,880
Spain	40	16,200	70	35,200
Sweden	(3)	400	3	848
Switzerland	2	366	30	955
Taiwan	297 <sup>r</sup>	103,000	276	99,700
Thailand	194	21,900	577	79,100
Turkey	374	37,100	570	71,400
Turks and Caicos Islands	1	152	4	527
United Kingdom	14	5,770	19	8,420
Venezuela	2	1,270	6	1,010
Vietnam	10	3,130	7	2,340
Other	32 <sup>r</sup>	8,020 <sup>r</sup>	17	10,300
Total	8,950	1,290,000	10,800	1,940,000

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping. Export valuation is free alongside ship. The United States exported scrap to 77 countries in 2002 and 79 countries in 2003.

<sup>3</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 10  
U.S. EXPORTS OF IRON AND STEEL SCRAP, BY CUSTOMS DISTRICT<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Customs district	2002		2003	
	Quantity	Value	Quantity	Value
Baltimore, MD	3	2,400	34	9,360
Boston, MA	587	50,200	667	90,600
Buffalo, NY	119	23,000	133	28,400
Charleston, SC	19	7,300	16	8,410
Charlotte, NC	15	1,760	24	3,040
Columbia-Snake River, OR/WA	190	28,200	383	58,100
Detroit, MI	298	38,400	246	37,100
Duluth, MN	4	627	67	8,050
Honolulu, HI	138	16,900	119	22,200
Houston-Galveston, TX	62	36,300	88	63,800
Laredo, TX	319	41,200	354	51,100
Los Angeles, CA	1,670	274,000	2,070	409,000
Miami, FL	35	13,600	41	16,300
Mobile, AL	1	593	9	3,820
New Orleans, LA	71	44,100	281	118,000
New York, NY	2,010	270,000	2,020	366,000
Nogales, AZ	34	3,420	37	2,760
Norfolk, VA	167	29,700	219	37,200
Ogdensburg, NY	25	5,740	17	6,550
Pembina, ND	314	30,100	252	29,600
Philadelphia, PA	104	11,300	435	60,200
Portland, ME	109	11,900	198	29,400
Providence, RI	377	37,800	285	35,100
San Diego, CA	25	2,920	285	9,600
San Francisco, CA	1,170	159,000	1,110	189,000
San Juan, PR	19	1,940	79	9,440
Savannah, GA	35	14,300	37	13,300
Seattle, WA	363	63,800	577	120,000
Saint Albans, VT	10	3,160	16	5,210
Tampa, FL	155	16,600	398	53,400
Other	500 <sup>r</sup>	47,800 <sup>r</sup>	410	47,400
Total	8,950	1,290,000	10,800	1,940,000

<sup>r</sup>Revised.

<sup>1</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.  
Export valuation is free alongside ship.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 11  
U.S. EXPORTS OF IRON AND STEEL SCRAP, BY GRADE<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Grade	2002		2003	
	Quantity	Value	Quantity	Value
No. 1 heavy-melting scrap	1,430	144,000	1,950	259,000
No. 2 heavy-melting scrap	385	37,300	331	43,700
No. 1 bundles	67	7,300	190	24,200
No. 2 bundles	76	6,680	40	6,300
Shredded steel scrap	3,000	306,000	3,560	489,000
Borings, shovelings, and turnings	123	9,150	157	13,600
Cut plate and structural	502	56,000	685	96,400
Tinned iron or steel	117	23,700	188	29,000
Remelting scrap ingots	5	3,730	7	8,130
Stainless steel scrap	342	252,000	505	382,000
Other alloy steel scrap	700	202,000	890	280,000
Other steel scrap <sup>3</sup>	1,360	133,000	1,190	141,000
Iron scrap	848	110,000	1,080	167,000
Total	8,950	1,290,000	10,800	1,940,000
Ships, boats, and other vessels for scrapping	40	3,230	48	2,580
Used rails for rerolling and other uses <sup>4</sup>	12	4,680	49	16,100
Grand total	9,000	1,300,000	10,900	1,960,000

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Export valuation is free alongside ship.

<sup>3</sup>Includes tinplate and terneplate.

<sup>4</sup>Includes mixed (used plus new) rails. More information can be found in table 15.

Source: U.S. Census Bureau.



TABLE 12

U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP, BY COUNTRY<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Country	2002		2003	
	Quantity	Value	Quantity	Value
Argentina	(3)	426	1	201
Aruba	(3)	11	6	671
Bahamas, The	9	537	4	415
Brazil	2	423	45	5,910
Canada	1,730	197,000	2,310	305,000
Dominican Republic	30	3,170	55	6,310
Egypt	2	1,270	1	740
France	(3)	111	1	129
Germany	(3)	40	1	234
Hong Kong	--	--	1	99
Italy	(3)	121	1	1,260
Japan	5	1,120	1	906
Mexico	80	28,100	81	42,800
Netherlands	17	1,980	12	2,050
Netherlands Antilles	--	--	1	13
Russia	119	13,800	126	16,700
Sweden	244	25,700	205	27,900
Taiwan	(3)	351	1	746
United Arab Emirates	--	--	1	93
United Kingdom	708	77,700	630	95,500
Other	178 <sup>r</sup>	24,100 <sup>r</sup>	3	2,600
Total	3,130	376,000	3,490	511,000

<sup>r</sup>Revised. -- Zero.<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.<sup>2</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping.

Import valuation is Customs value. The United States imported scrap from 44 countries in

2002 and 46 countries in 2003.

<sup>3</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 13  
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP,  
BY CUSTOMS DISTRICT<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Customs district	2002		2003	
	Quantity	Value	Quantity	Value
Buffalo, NY	157	38,800	319	64,400
Charleston, SC	1,030	113,000	1,030	148,000
Charlotte, NC	39	3,870	64	7,880
Chicago, IL	117	5,350	98	4,190
Cleveland, OH	4	321	11	198
Detroit, MI	894	95,200	1,230	157,000
Duluth, MN	6	1,100	10	1,720
El Paso, TX	8	2,670	13	3,720
Houston-Galveston, TX	7	5,000	23	3,000
Laredo, TX	41	14,900	7	6,690
Los Angeles, CA	3	1,700	39	25,600
Mobile, AL	45	5,120	47	5,010
New Orleans, LA	237	25,500	111	16,100
Nogales, AZ	6	1,940	9	2,560
Ogdensburg, NY	19	5,380	20	6,990
Pembina, ND	31	6,410	26	8,640
Philadelphia, PA	79	9,520	(3)	106
San Diego, CA	23	7,330	19	7,040
Seattle, WA	346	28,400	401	37,600
Tampa, FL	19	1,680	4	1,650
Other	14 <sup>r</sup>	3,440 <sup>r</sup>	5	3,360
Total	3,130	376,000	3,480	511,000

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Excludes used rails for rerolling and other uses and ships, boats, and other vessels for scrapping. Import valuation is Customs value.

<sup>3</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 14  
U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP, BY CLASS<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Class	2002		2003	
	Quantity	Value	Quantity	Value
No. 1 heavy-melting scrap	15	1,210	19	1,950
No. 2 heavy-melting scrap	27	2,590	3	250
No. 1 bundles	252	30,300	391	54,700
No. 2 bundles	--	--	(3)	39
Shredded steel scrap	912	92,300	819	107,000
Borings, shovelings, and turnings	26	2,510	18	1,510
Cut plate and structural	80	8,270	103	13,300
Tinned iron or steel	13	1,820	20	3,390
Remelting scrap ingots	3	621	1	750
Stainless steel scrap	81	49,400	89	70,200
Other alloy steel scrap	271	40,000	132	29,600
Other steel scrap <sup>4</sup>	1,160	126,000	1,580	198,000
Iron scrap	284	21,300	307	29,900
Total	3,130	376,000	3,480	511,000
Ships, boats, and other vessels for scrapping	(3)	5	3	583
Used rails for rerolling and other uses <sup>5</sup>	195	26,900	207	45,600
Grand total	3,320	403,000	3,690	557,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Import valuation is Customs value.

<sup>3</sup>Less than 1/2 unit.

<sup>4</sup>Includes tinplate and terneplate.

<sup>5</sup>Includes mixed (used plus new) rails. More information can be found in table 16.

Source: U.S. Census Bureau.

TABLE 15

U.S. EXPORTS OF USED RAILS FOR REROLLING AND OTHER USES, BY COUNTRY<sup>1,2</sup>

Country	2002		2003	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Australia	301	\$310	1,270	\$1,320
Brazil	12	61	25	74
Canada	3,710	932	13,400	3,860
Chile	181	155	42	58
China	4	33	6,700	1,070
Colombia	--	--	186	70
Dominican Republic	533	206	448	150
Germany	152	123	14	7
Guatemala	--	--	91	28
Hong Kong	8	15	141	30
India	--	--	60	97
Israel	--	--	18	8
Japan	--	--	10	56
Korea, Republic of	(3)	4	19	10
Mexico	2,610	850	20,600	6,950
Peru	124	87	1,030	756
Spain	(3)	3	22	26
Sweden	(3)	3	33	21
Taiwan	2,630	417	4,960	1,110
Trinidad and Tobago	19	8	27	14
United Kingdom	44	45	27	52
Venezuela	649	638	129	169
Other	529 <sup>†</sup>	794 <sup>†</sup>	35	153
Total	11,500	4,680	49,300	16,100

<sup>†</sup>Revised. -- Zero.<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.<sup>2</sup>Exports contain mixed (used plus new) rails totaling 2,800 metric tons (t) valued at \$2,660,000 in 2002 and 12,800 t valued at \$8,170,000 in 2003. Export valuation is free-alongside-ship value.<sup>3</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 16  
U.S. IMPORTS FOR CONSUMPTION OF USED RAILS FOR REROLLING AND  
OTHER USES, BY COUNTRY<sup>1, 2</sup>

Country	2002		2003	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Australia	58	\$58	--	--
Austria	394	309	--	--
Canada	43,000	6,920	26,300	\$3,830
Dominican Republic	--	--	27	6
Georgia	4,630	598	--	--
Germany	62	84	514	375
Japan	292	186	62	44
Luxembourg	4	3	--	--
Malaysia	--	--	4	9
Poland	--	--	14	385
Russia	87,400	12,200	180,000	41,000
Taiwan	--	--	6	22
Ukraine	59,000	6,600	--	--
Other	1	9	1	2
Total	195,000	26,900	207,000	45,600

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Import valuation is Customs value.

Source: U.S. Census Bureau.

TABLE 17  
U.S. EXPORTS OF DIRECT-REDUCED IRON, BY COUNTRY<sup>1, 2</sup>

Country	2002		2003	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Australia	29	\$3	--	--
Germany	64	11	--	--
Ireland	--	--	77	\$8
Malaysia	--	--	167	26
Mexico	811	86	1,180	125
Peru	--	--	3,450	366
Total	904	100	4,870	525

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Data are for steelmaking-grade direct-reduced iron only.

Source: U.S. Census Bureau.

TABLE 18  
U.S. IMPORTS FOR CONSUMPTION OF DIRECT-REDUCED IRON, BY COUNTRY<sup>1, 2</sup>

Country	2002		2003	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Brazil	3,150	\$209	8,780	\$448
Canada	50,200	4,180	19,900	2,130
Russia	--	--	36,400	5,120
Sweden	--	--	40	7
Trinidad and Tobago	254,000	27,600	296,000	40,600
Ukraine	41,700	3,850	--	--
Venezuela	1,660,000	159,000	1,580,000	194,000
Total	2,010,000	195,000	1,940,000	242,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Data are for steelmaking-grade direct-reduced iron only.

Source: U.S. Census Bureau.

TABLE 19  
U.S. EXPORTS OF PIG IRON, BY COUNTRY<sup>1,2</sup>

Country	2002		2003	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Belgium	--	--	110	\$10
Canada	7,020	\$1,140	3,270	607
China	2,530	228	132	32
Colombia	100	31	50,000	4,400
Germany	141	17	96	84
Korea, Republic of	3	3	1,530	211
Mexico	23,000	3,360	24,000	2,460
Singapore	--	--	256	22
Taiwan	17	8	638	57
Tunisia	495	43	335	29
Turkey	--	--	5,050	860
United Kingdom	40	3	133	15
Other	297 <sup>r</sup>	76 <sup>r</sup>	133	53
Total	33,600	4,910	85,700	8,850

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes the following grades of pig iron: less than or equal to 0.5% phosphorus content, greater than 0.5% phosphorus content, and alloy grade. Export valuation is free alongside ship value.

Source: U.S. Census Bureau.



TABLE 20  
U.S. IMPORTS FOR CONSUMPTION OF PIG IRON, BY COUNTRY<sup>1,2</sup>

Country	2002		2003	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Bahamas, The	66,900	\$7,430	--	--
Brazil	3,440,000	387,000	2,890,000	\$418,000
Canada	111,000	16,700	87,000	15,500
Colombia	218	164	188	128
Hungary	55,400	6,420	--	--
Japan	5	10	--	--
Mexico	--	--	11	6
Russia	479,000	54,100	620,000	93,000
South Africa	92,600	11,200	106,000	14,300
Ukraine	331,000	40,300	190,000	30,300
United Kingdom	--	--	12	13
Venezuela	46,000	4,500	--	--
Total	4,620,000	527,000	3,890,000	571,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes the following grades of pig iron: less than or equal to 0.5% phosphorus content, greater than 0.5% phosphorus content, and alloy grade. Import valuation is Customs value.

Source: U.S. Census Bureau.